



SkipTheQ: Leveraging Digital Innovation to Strengthen Pharmacy Operations and Reduce Waiting Times in a Public Tertiary Hospital

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Abstract

Long waiting times remain a persistent challenge in South African public sector pharmacies, undermining patient satisfaction and efficiency. At Kalafong Tertiary Hospital, a high-volume facility serving approximately 1000 patients daily, average waiting times reached 120 minutes, double the provincial benchmark of 60 minutes. Contributing factors included limited human resources, reliance on manual dispensing systems, and patients being ineligible for alternative distribution models, such as the Centralised Chronic Medicines Dispensing and Distribution system (CCMDD) or DAPLAPMEDS. In March 2024, the hospital pharmacy department introduced SkipTheQ, a digital booking system accessible via a mobile app, web platform and WhatsApp. The platform allows patients to schedule collection slots, enabling pharmacy staff to pre-pack prescriptions in advance. Since implementation, waiting times have dropped to 50.5 minutes, with over 6500 patients registered and more than 15 250 appointments served. Patient feedback has been overwhelmingly positive, and staff report improved workload distribution. This experience demonstrates that low-cost, digital innovation can strengthen operational efficiency, improve patient experience, and align pharmacy services with broader health system goals.

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Background and problem statement

Kalafong Tertiary Hospital, located in Atteridgeville, Pretoria, dispenses prescriptions for approximately 1000 patients daily. Prior to 2024, the Out-Patient Department Pharmacy struggled with overcrowding, inefficient manual processes, and insufficient human resources. Waiting times averaged 120 minutes, double the provincial target.¹



The bottlenecks stemmed from three main issues: dependence on manual folder retrieval, staff shortages, and patients being ineligible for alternative access programmes such as CCMDD or DAPLAPMEDS.^{2,3} Many patients required complex regimens or medicines outside standard formularies, leaving them dependent on the hospital pharmacy. This created an urgent need for a sustainable operational innovation to reduce waiting times, improve efficiency, and restore patient trust.

Rationale for innovation

Expanding human resources was not a feasible short-term solution. Programmes like CCMDD and DAPLAPMEDS provided relief for

some, but many patients remained tied to facility-level collections.^{2,3} Overcrowding, long queues, and patient dissatisfaction persisted. SkipTheQ was conceived to complement existing programmes by streamlining pharmacy operations for patients excluded from these alternatives.

The intervention aligned with Batho Pele principles by emphasising consultation, service standards, and access.⁴ Patients could now book appointments online or through WhatsApp, giving them greater control over their care. For the pharmacy, pre-packing prescriptions ahead of time redistributed workloads, reduced peak-hour congestion, and improved efficiency. Similar to findings from other South African initiatives, this type of operational redesign enhances resilience in pharmacy services.⁵ Importantly, the system required minimal financial investment, relying on basic digital tools integrated into existing workflows.

The SkipTheQ intervention

SkipTheQ is a digital appointment booking platform with dual access points: Internet and WhatsApp. Patients booking online receive an automated reference number and confirmation. WhatsApp requests are entered by an administrative clerk to accommodate those with limited digital literacy. The promise to patients was: "Collect your chronic medication in 15 minutes or less".

Bookings are made at least seven days in advance to allow folder retrieval. Two days before collection, staff generated a patient list and pre-packed medicines. On collection day, patients presented their reference number and were served within minutes. The system was integrated with existing workflows without requiring additional staff.

The target groups included patients who were excluded from CCMD or DAPLAMEDS and those unable to spend hours queuing, such as employed individuals and caregivers. By focusing on this cohort, the platform reduced pressure on frontline staff and queues, while improving patient dignity and access. Research shows that integrating digital tools into service delivery is increasingly recognised as a strategy to improve health system performance in low- and middle-income settings.^{6,7}

Results and operational impact

The project was launched on 8 March 2024. Within 18 months, over 6500 patients registered and more than 15 250 appointments were booked. Demand was so strong that slots extended into October 2025. Average waiting times fell from 120 minutes to 50.5 minutes, surpassing the provincial target of 60 minutes.¹

Patients expressed relief at avoiding queues, with some sending a personal email of thanks. Employed patients valued the ability to integrate collection into work schedules, while elderly caregivers appreciated the reduced strain. Staff reported less stress, as peak-hour congestion decreased and workloads were redistributed. Pre-packing during quiet periods created smoother operations and fewer patient complaints.

The intervention also improved hospital performance metrics, directly contributing to meeting provincial service delivery standards. Similar to findings in other studies, targeted operational changes can significantly reduce inefficiencies in medicine access while improving patient satisfaction.^{5,8}

Health system strengthening dimension

SkipTheQ reinforced core Batho Pele principles. Patients were consulted through flexible booking options; service standards improved by consistently meeting waiting time benchmarks; access and courtesy were enhanced through shorter queues and calmer environments. The intervention offered significant value for money, implemented at minimal cost.²

By targeting patients outside CCMD and DAPLAMEDS, SkipTheQ complemented rather than duplicated existing programmes.^{2,3} It strengthened resilience by enabling facilities to adapt to demand without additional staffing. Importantly, it aligns with the goals of National Health Insurance (NHI) by demonstrating that patient-centred, technology-driven innovations are feasible in resource-limited settings.⁹ Its scalability is high, given the reliance on widely available digital tools and minimal infrastructure.

Challenges and lessons learned

Several challenges emerged.

First, reliance on manual record systems sometimes delayed folder retrieval, highlighting the broader need for digitised health records.⁶

Second, patient digital literacy varied. While the web-based platform automated bookings, many relied on WhatsApp, requiring

administrative support and increasing workload. Flexibility ensured inclusivity but added complexity.

Third, staff buy-in required strong change management. Some initially feared increased workload or errors in pre-packing. Through training and demonstration of benefits, staff became active supporters.

Fourth, minimal infrastructure limited advanced features such as real-time stock integration.

Finally, equity considerations were critical; patients with higher digital literacy adopted quickly, raising concerns of a “two-tier” system. Monitoring and support mechanisms were necessary to ensure fairness.

The key lesson is that digital innovation must be inclusive, supported by strong change management, and aligned with broader system reforms such as digitisation of records and infrastructure investment.^{5,7}

Conclusion

SkipTheQ demonstrated that low-cost, patient-centred digital innovation can significantly improve efficiency and patient experience in public hospital pharmacies. By reducing waiting times below provincial targets, the system restored dignity for patients and eased pressures on staff. Its rapid adoption shows both demand and scalability.

More broadly, the project strengthened health system performance by aligning with Batho Pele principles, complementing existing programmes, and demonstrating readiness for NHI reforms. While challenges remain, manual record dependence, digital literacy gaps, and infrastructure limitations underscore the importance of continued innovation and investment in digital health.

Ultimately, SkipTheQ is not just a local success but a replicable model. It illustrates how pharmacists, through leadership and creativity, can harness technology to solve persistent operational challenges, advancing both efficiency and equity in patient care.

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